FUEL OIL

Also known as: Kerosene, Diesel Fuel, Home Heating Oil, Coal Oil, JP5
Chemical reference numbers (CAS): 8008-20-6 and 70892-10-3

WHAT IS FUEL OIL?

Fuel oil is a general term for a number of burnable liquids made from crude oil. Most common is Fuel Oil No.1 (also called kerosene), range oil, and jet fuel (JP5). Fuel oils 1-D and 2-D are diesel fuels. Fuel oil No. 2 is home heating oil, and fuel oil No. 4 is a diesel fuel for boats. All fuel oil mixtures have similar chemical and physical properties.

Fuel oils are used to run many types of engines, lamps and heaters. Sometimes small amounts of fuel oil are stored in portable containers for use in space heaters, to clean metal parts, or used in camp stoves or lanterns.

Most fuel oil entering the environment comes from spills or leaking storage tanks. When spilled on soil, some components of fuel oil attach to soil. Furthermore, fuel spilled on water or soil, evaporates into the air. Fuel oil can also contaminate soil sediments and private drinking water supplies.

HOW ARE PEOPLE EXPOSED TO FUEL OIL?

Breathing: People can breathe fuel oil vapors when filling tanks or after a spill. Other situations include using kerosene heaters, or using kerosene to clean machinery or paint brushes. If water supplies are contaminated, people can inhale the vapors as they bathe, do laundry or use the water for other household purposes. Fuel oil spills in basements or attached garages can seriously contaminate the air inside of homes.

Drinking/Eating: Low level exposure can occur when contaminated water is used for drinking and/or for preparing food.

Touching: Some fuel oil can pass through the skin when people use it as a solvent, spill it on their skin or use contaminated water. Since some of the chemicals in fuel oil attach to soil particles, children can be exposed as they play in contaminated soil.

DO STANDARDS EXIST FOR REGULATING FUEL OIL?

Water: Although there are no drinking water standards for fuel oil, there are standards for some of its ingredients. "Aromatic" compounds make up about 35% of fuel oil, such as benzene, toluene, and xylene.The standard for **benzene** is 5 parts per billion (ppb), **toluene** is 1 part per million (ppm), and **xylene** is 10 ppm. We suggest you *stop drinking or cooking with water* containing these chemicals at levels higher than the standard, or if you smell a kerosene odor or see a oily sheen. If levels are very high, you should avoid washing, bathing, or using the water for other purposes.

Air: No standards exist for the amount of fuel oil vapors allowed in homes or workplaces. Most people can smell fuel oil at levels as low as 0.1 parts per million (ppm) in air.

Use fuel oil only in well-ventilated areas. Large spills should be cleaned by a professional. All spills require significant cleaning and venting. Tightly seal and properly label storage containers. Be sure to vent kerosene heaters outdoors. This will reduce your exposure to carbon monoxide, a deadly gas that can be formed as kerosene burns.

WILL EXPOSURE TO FUEL OIL RESULT IN HARMFUL HEALTH EFFECTS?

Most people can withstand short exposures to fuel oil vapors without any problems. However, breathing fuel oil vapors overtime can affect a person's ability to smell and taste. High levels can cause headaches, nausea, light-headedness, poor coordination, increased blood pressure and difficulty concentrating.

Skin contact can cause irritation that results in itchiness, redness, pain, blisters, and peeling.

Swallowing fuel oil can cause vomiting, diarrhea, swelling of the stomach, cramps, coughing, drowsiness, restlessness, irritability and breathing difficulties. Drinking more than an ounce can result in coma or death. Most accidental poisonings involve children. Many of these children drink kerosene that was being kept in old soft drink bottles.

Cancer: Exposure to fuel oil is not known to cause cancer in humans. However, long-term exposure to benzene, the most toxic component of fuel oil, is known to cause leukemia.

Reproductive Effects: Reproductive and growth-related effects of fuel oil are not known.

Organ Systems: Prolonged or high level exposures to fuel oil can cause kidney and liver damage, nervous system damage, increased blood pressure and reduced blood clotting.

In general, chemicals affect the same organ systems in all people who are exposed. However, the seriousness of the effects may vary from person to person. A person's reaction depends on several things, including individual health, heredity, previous exposure to chemicals including medicines, and personal habits such as smoking or drinking.

It is also important to consider the length of exposure to the chemical; the amount of chemical exposure; and whether the chemical was inhaled, touched, or eaten.

CAN A MEDICAL TEST DETERMINE EXPOSURE TO FUEL OIL?

Fuel oil leaves the body within 2-3 days. Although benzene, toluene, and xylene can be measured in blood, there is no good method to determine the level of your exposure. Through tests of the nervous system, kidneys, liver and blood your doctor can evaluate the health effects of fuel oil exposure.

Seek medical advice if you have any symptoms that you think may be related to chemical exposure.

This fact sheet summarizes information about this chemical and is not a complete listing of all possible effects. It does not refer to occupational exposure or emergency situations.

FOR MORE INFORMATION

- Poison Control Center, 800-815-8855
- Your local public health agency
- Division of Public Health, BEH, 1 West Wilson Street, Rm. 150, Madison, WI 53701-2659, (608) 266-1120 or Internet: http://www.dhfs.state.wi.us/eh

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